SPECTRUM®

TRXI
Management Module Guide

CABLETRON SYSTEMS

The Complete Networking Solution™

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Preface

Use this guide if you are going to manage a Cabletron TRXI device through SPECTRUM. Before reading this guide, you should be familiar with SPECTRUM's functions as described in the Operation documentation and the Administration documentation. You should also be familiar with any network management and hardware requirements described in the related hardware documentation.

What is in this Guide

The following chapter descriptions outline the organization of the *TRXI Management Module Guide*.

CHAPTER	DESCRIPTION
Chapter 1 Introduction	Describes the TRXI management module and model types.
Chapter 2 Device View	Describes the Device View's representation of a TRXI, as well as the views available from the Device Menu.
Chapter 3 Configuration Views	Describes the Configuration Views for the TRXI model and the device-specific management information provided by each view.
Chapter 4 Event and Alarm Messages	Contains a listing and explanation of the alarm and event messages generated in the Event Log or Alarm View for the TRXI device model type.
Chapter 5 Application View	Decribes the device-specific Application Views for the TRXI management module.

Conventions

In this manual the following conventions are used.

- Command names are printed in bold; for example, **Clear** or **Save & Close**.
- Menu selections to access a view are printed in bold; for example, **Configuration** or **Detail**.
- Buttons are represented by a shadowed box; for example, Help.

Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigation techniques as described in the Administration documentation, the Operation documentation, and the following documentation:

SPECTRUM Report Generator User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

LAN Troubleshooting Handbook, Mark Miller (1989, M&T Publishing, Inc.)

The Simple Book — An Introduction to Management of TCP/IP-based Internets, Marshall T. Rose, Performance Systems International, Inc.

Computer Networks, Andrew S. Tanenbaum, Prentice-Hall, Inc.

Local Area Networks Architectures and Implementations, James Martin & Kathleen K. Chapman or the Arben Group, Inc. (1989, Prentice-Hall, Inc.)

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spectrum-techdocs@ctron.com

Chapter 1

Introduction

What is in this Chapter

This chapter describes the SPECTRUM Management Module for the TRXI. It also provides the model type name assigned to the TRXI in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for device models in SPECTRUM.

TRXI Management Module

The TRXI Management Module manages TRXI devices using the SNMP network management agent and the Management Information Bases (MIBs), included with the management module. Table 1-1 lists the supported device models and descriptions.

Table 1-1. Supported Device Models

Device Model	Description
TRXI-22 & TRXI-22A	12 port intelligent Token Ring concentrator. Supports UTP Categories 3, 4, and 5. TRXI-22A has active ports, TRXI-22 has passive ports.
TRXI-24 & TRXI-24A	24 port intelligent Token Ring concentrator. Supports UTP Categories 3, 4, and 5. TRXI-24A has active ports, TRXI-24 has passive ports.
TRXI-42 & TRXI-42A	12 port intelligent Token Ring concentrator. Supports IBM Type 1, 2, 6, or 9 STP cabling. TRXI-42A has active ports, TRXI-42 has passive ports.
TRXI-44 & TRXI-44A	24 port intelligent Token Ring concentrator. Supports IBM Type 1, 2, 6, or 9 STP cabling. TRXI-44A has active ports, TRXI-44 has passive ports.

TRXI Applications

The TRXI supports both common and device-specific applications. Common applications are described in the *Bridging Applications Reference*, the *MIB II Applications Reference*, and the *Miscellaneous Applications Reference*, and are as follows:

- Bridging (CSIBridge)
  - Spanning Tree (Ct_Stp_App)
  - Transparent (Transparnt_App)
  - Ethernet Special Database (Ct_BdgEnet_App)
  - Static (Static_App)
- MIB-II (SNMP2_Agent)
  - IP (IP2_App)
  - System (System2_App)
  - ICMP (ICMP_App)
  - UDP (UDP2_App)
- DownLoad App (CtDownLoadApp)

The TRXI supports one device-specific application. This application is described in Chapter 5, *Application View,* and is as follows:

- CT Token Ring (CTTokenRingApp)

RMON and DLM are also supported and SPECTRUM management of these MIBs may be purchased separately. Refer to the documentation provided with the RMON and DLM management modules for descriptions of these

capabilities. The following chapters explain how to use SPECTRUM and the management module software to monitor and manage a TRXI.

The TRXI is based on the following Management Information Bases (MIBs) which come as a part of the software module for the model type:

- Cabletron Dot5 MIB
- Cabletron Token Ring FNB MIB
- Cabletron DownLoad MIB
- Internet MIB-II (RFC 1213)
- Cabletron Chassis MIB

The TRXI supports both common and device-specific applications. Common applications are

Chapter 2

Device View

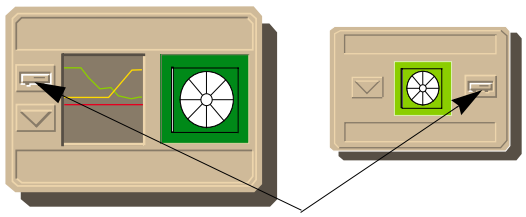
What is in this Chapter

The Device View for the TRXI allows you to view the logical representations of the TRXI device and ports. The Device View also provides you with menu bar access to views that monitor and control the TRXI and its ports.

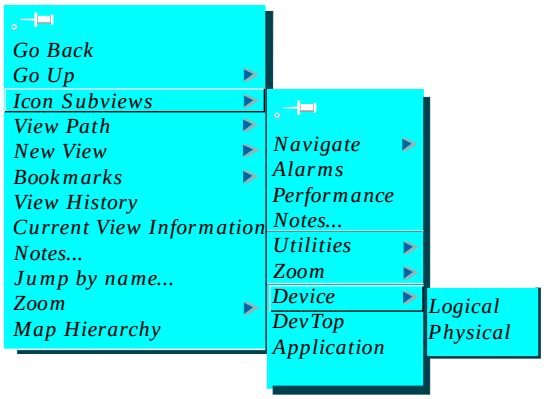
Accessing the Device View

The Logical or Physical Device view is accessed using one of the following methods:

- Double-click on the Device view button of the TRXI-22/24 device icon. This will open the Device view that was opened last (i.e. Logical or Physical).



- Highlight the TRXI-22/24 device icon and select Device->Logical or Device->Physical from the Icon Subviews menu.



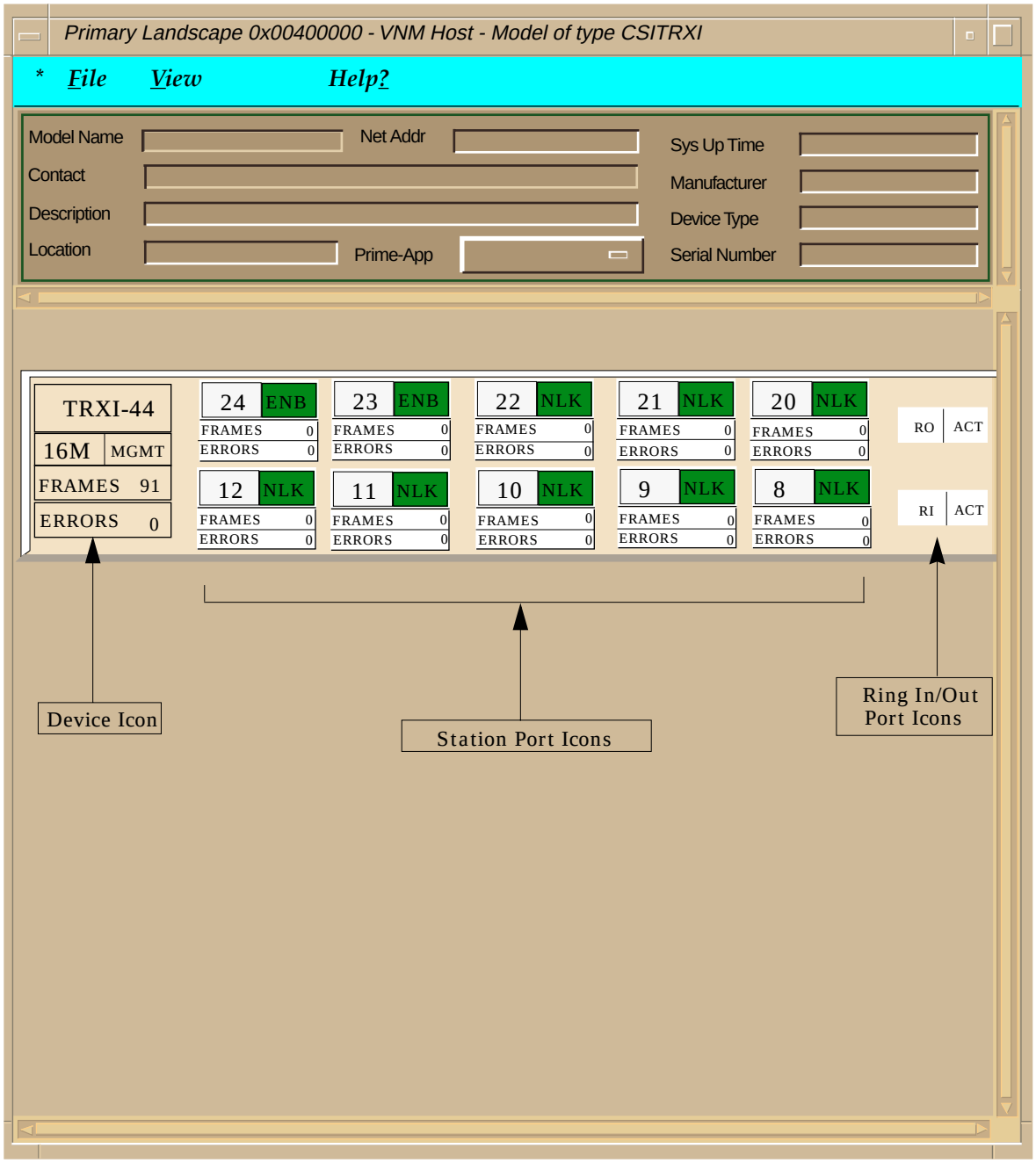
Device View Configuration

The Device view gives an actual dynamic representation of the TRXI configuration. If the configuration changes, you see the corresponding change within this view. This change in the view occurs after the model's next polling cycle.

Logical Device Representation

Instead of presenting a physical image of the TRXI, the logical device representation provides gauges and information about the device, station ports, and ring ports. The logical device is divided into three areas. The Device icon area presents information about the device; the Station Port icon area presents information about each station port; and the Ring In/Out Port icon area presents information about the Ring In and Ring Out ports. Figure 2-1 shows a representation of a TRXI Logical Device view.

Figure 2-1. TRXI Logical Device View



Logical Device Icon

The Logical Device icon (refer to Figure 2-1) has specific double-click zones and a pop-up Device Menu. Access the Device Menu by clicking on the logical device icon, and then selecting Icon Subviews from the View menu. Figure 2-2 provides a breakdown of the device icon, its applicable double-click zones, and the Device Menu selections. Table 2-1 provides definitions of the Device Menu selections.

Figure 2-2. Device Icon Detail

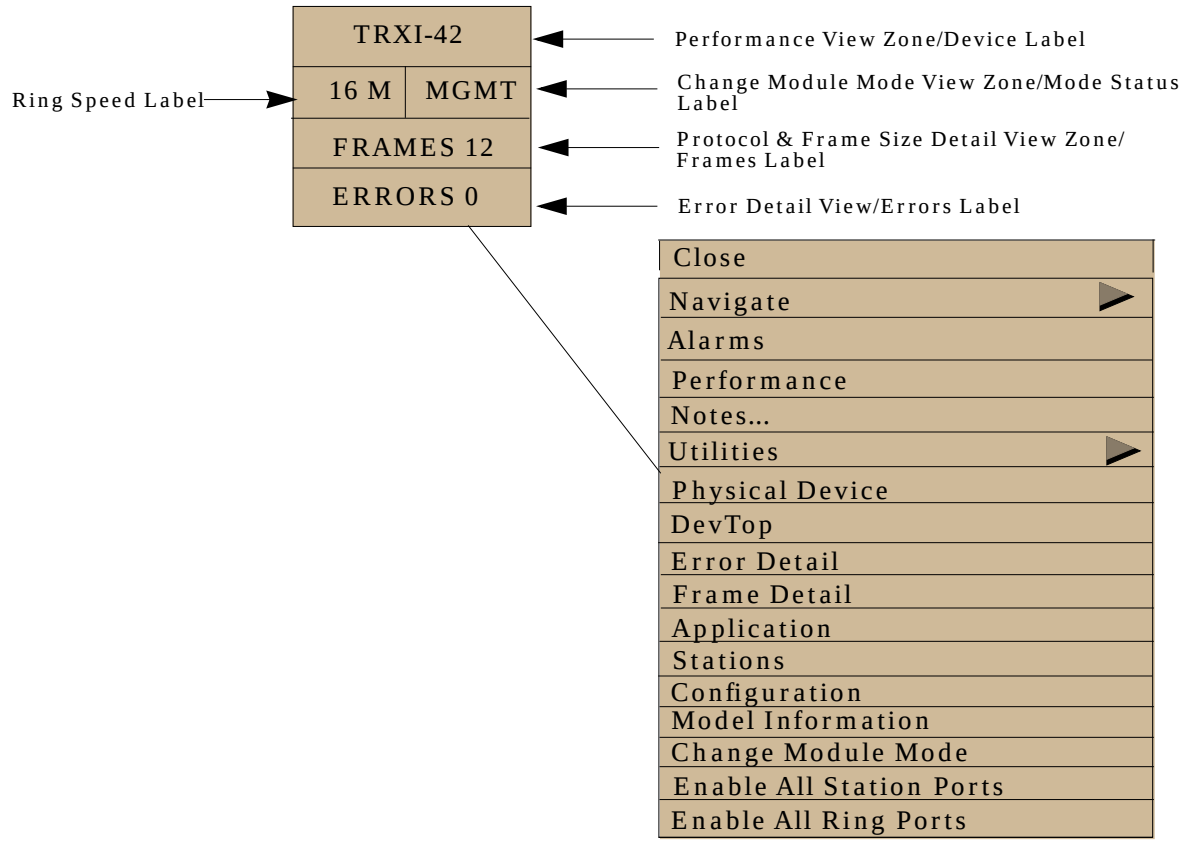


Table 2-1. Device Icon Menu Selections

Menu Selection	Description
Close	Closes the current window.
Navigate	Opens the Navigator sub-menu, allowing you to Navigate In or Up.
Alarms	Opens the Alarm View containing alarms (if any) for the model.
Performance	Opens the Ring Performance View.
Notes	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities sub-menu, allowing you to access utilities you have purchased for SPECTRUM, such as SpectroGUARDIAN.
Physical Device	Opens the TRXI Physical Device View.
DevTop	Opens the TRXI Device Topology View.
Error Detail	Opens the Ring Error Detail View.
Frame Detail	Opens the Ring Protocol & Frame Size Detail View.
Application	Opens the TRXI Application View.
Stations	Opens the Ring Station Table View.
Configuration	Opens the Ring Configuration View.
Model Information	Opens the Model Information View.
Change Module Mode	Displays the Change Module Mode View, which allows you to toggle the mode of the module between Management and Auto.
Enable All Station Ports	Displays the Enable All Station Ports view, which allows you to enable all the station ports on the module.
Enable All Ring Ports	Displays the Enable All Ring Ports view, which allows you to enable all the ring ports on the module.

Logical Device Icon Components

The Logical Device icon consists of several areas providing information pertaining to the device (refer to Figure 2-2). These areas have the following functions:

Device Label
Displays the type of physical device being modeled.

Ring Speed
Displays the speed of the ring (4M or 16M).

Mode Status Label
Displays the current mode setting for the module (MGMT or AUTO).

Frames Label
Displays the current frame rate for the device.

Errors Label
Displays the current error rate for the device.

Logical Station Port Icons

The Logical Station Port icons (refer to Figure 2-3) have specific double-click zones and a pop-up Station Port Menu. Access the Station Port Menu by clicking on a logical station port icon, and then selecting Icon Subviews from the View menu. Figure 2-3 provides a breakdown of the station port icon, its applicable double-click zones, and the Station Port Menu selections. Table 2-2 provides definitions of the Station Port Menu selections.

Figure 2-3. Station Port Icon Detail

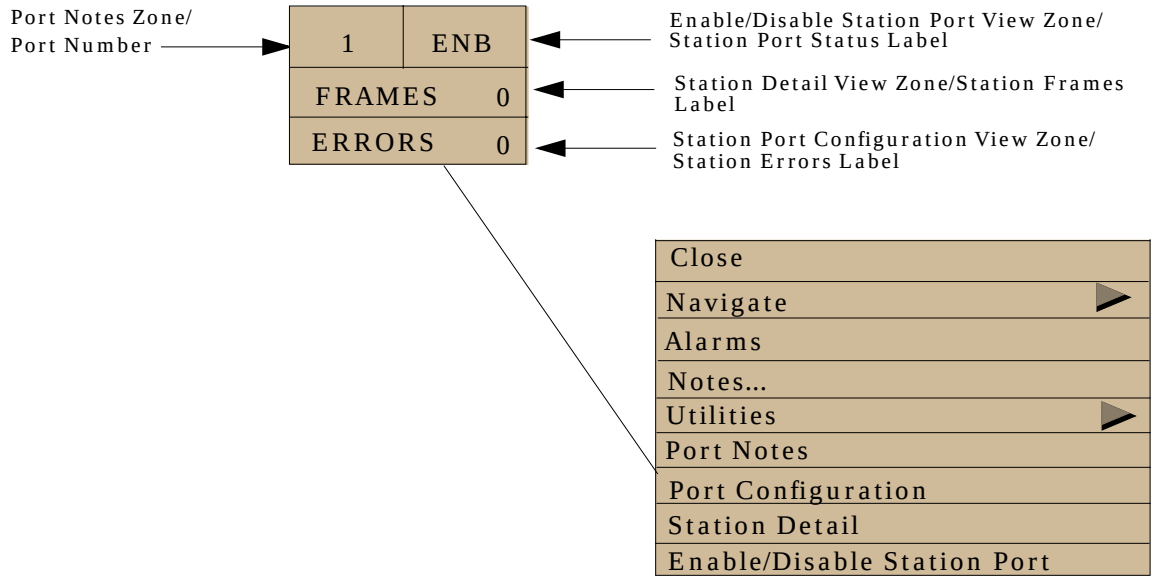


Table 2-2. Station Port Icon Menu Selections

Menu Selection	Description
Close	Closes the current window.
Navigate	Opens the Navigator sub-menu, allowing you to Navigate In or Up.
Alarms	Opens the SPECTRUM Alarm View containing alarms (if any) for the model.
Notes	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities sub-menu, allowing you to access utilities you have purchased for use with SPECTRUM, such as SpectroGUARDIAN.
Port Notes	Opens the SPECTRUM Notes facility for the port.
Port Configuration	Opens the Port Configuration View for the selected port.
Station Detail	Opens the Ring Station Detail View for the station (if any) connected to the selected port.
Enable/Disable Station Port	Displays the Enable/Disable Station Port View, which allows you to toggle the selected station port between enabled and disabled states.

Logical Station Port Icon Components

The Logical Station Port icons consist of several areas providing information pertaining to the station ports (refer to Figure 2-3). These areas have the following functions:

Port Number

The specific number of this station port. Double-clicking on this zone opens the Port Notes facility.

Port Status

The status of the station port, as follows:

INS (Inserted)	Green
BYP (Bypassed)	Blue
ENB (Enabled)	Yellow
INIT (Initializing)	Gray

Station Frames

Displays the current frame rate for the station on the port.

Station Errors

Displays the current error rate for the station on the port.

Logical Ring In/Out Port Icons

The Logical Ring In/Out Port Icons (refer to Figure 2-4) have specific double-click zones and a pop-up Ring In/Out Port Menu. Access the Ring In/Out Port Menu by clicking on a logical ring in/out port icon, and then selecting Icon Subviews from the View menu. Figure 2-4 provides a breakdown of the ring in/out port icon, its applicable double-click zones, and the Ring In/Out Port Menu selections. Table 2-3 provides definitions of the Ring In/Out Port Menu selections.

Figure 2-4. Ring In/Out Port Icon Detail

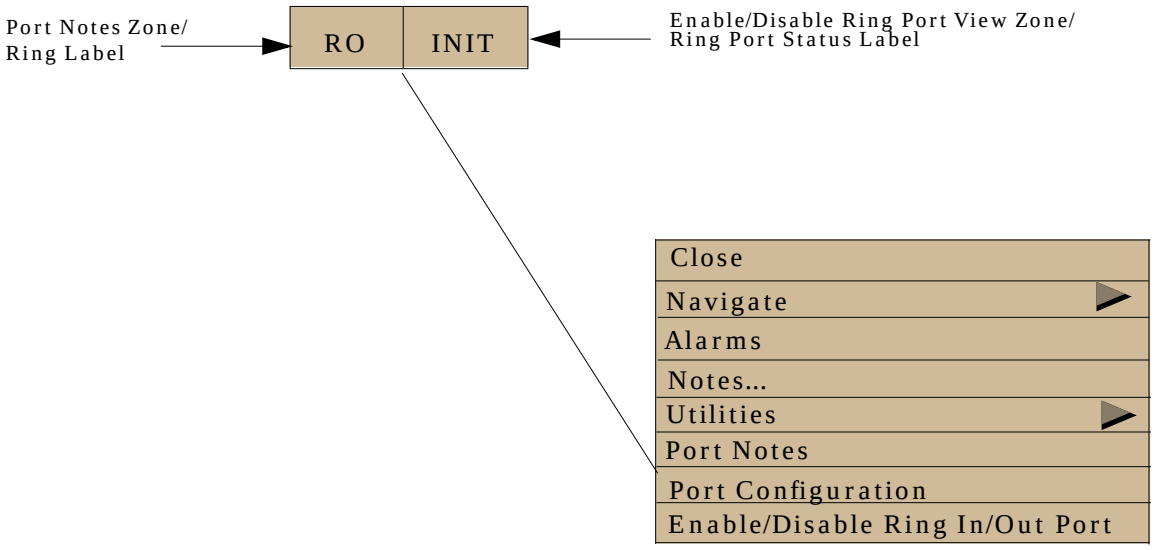


Table 2-3. Ring In/Out Port Icon Menu Selections

Menu Selection	Description
Close	Closes the current window.
Navigate	Opens the Navigator sub-menu, allowing you to Navigate In or Up.
Alarms	Opens the SPECTRUM Alarm View containing alarms (if any) for the model.
Notes	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities sub-menu, allowing you to access utilities you have purchased for use with SPECTRUM, such as SpectroGUARDIAN.
Port Notes	Opens the SPECTRUM Notes facility for the port.
Port Configuration	Opens the Port Configuration View for the selected port.
Enable/Disable Ring In/Out Port	Displays the Enable/Disable Ring In/Out Port View, which allows you to toggle the selected Ring In or Ring Out Port between enabled and disabled states.

Logical Ring In/Out Port Icon Components

The Logical Ring In/Out Port icons consist of several areas providing information pertaining to the ring in/out ports (refer to Figure 2-4). These areas have the following functions:

Ring Label
Identifies the port as RI (Ring In) or RO (Ring Out).

Ring Port Status
The status of the ring in/out port, as follows:

ACT (Active) - Link, Port EnabledGreen
ACT (Active) - Link, Port DisabledBlue
WRAP - No Link, Port DisabledBlue
WRAP - No Link, Port EnabledRed
INIT (Initializing) Gray

Physical Device View

The Physical Device view provides a physical representation of the TRXI hub. Access the Physical Device view by selecting Device->Physical from the Icon Subviews menu.You will get the same menu selections for the Physical Device view that are available for the Logical Device view.

Chapter 3

ConfigurationViews

What is in this Chapter

This chapter provides descriptions of the Configuration views that are available for the TRXI. These views allow you to access device-specific configuration information. The TRXI model type supports the following configuration views:

- Device Configuration Views
- Ring Configuration View
- Station Port Configuration View
- Ring Port Configuration View
- Security Configuration View
- Token Ring Station Table View
- 802.5 Station Table View
- Token Ring Isolating Errors Table
- Token Ring Non-Isolating Errors View
- Station Alarm Thresholds View
- Station Detail View
- Station Alarms Dialog Box
- Modify Allowed Station List View

TRXI Device Configuration View

The Device Configuration view provides information on the configuration of the TRXI and allows you to modify the values of some fields. This view provides the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Port Configuration

This section of the Device Configuration View provides the following information pertaining to the configuration of the device itself:

Station Ports ON Out Of
Defines the total number of enabled station ports on the addressed board.

Ring Ports ON Out Of
The total number of enabled ring in/ring out ports in this port group.

Enable All Station Ports

This button allows you to enable all the station ports in this port group by setting the value to Enable. The default value is NoEnable.

Enable All Ring Ports

This button allows you to enable all the ring ports in this port group by setting the value to Enable. The default value is NoEnable.

Host Configuration

This section of the Device Configuration view provides the following information pertaining to the configuration of the host:

Commands

This button allows you to send commands to the device by setting the correct value. Possible commands are HardwareReset, SoftwareReset, Open, and Close. The default value is NoOperation.

Open Status
The status of the device, or errors it has received, with respect to insertion into the ring.

Error Report Timer
The time interval in which the host adapter reports errors to the ring error monitor.

Active Monitor Contention

This button allows you to set or prohibit the possibility of the TRXI becoming the active monitor for the ring by setting the proper Allowed or NotAllowed status.

Host Error Status

This box in the Host Configuration section provides a series of read-only indicator buttons detailing the last error status returned by the TRXI. For information on the errors displayed, why they occurred, or how to rectify them, refer to the *TRXI Intelligent Hub User's Manual*.

Ring Configuration

This button opens the Ring Configuration view, which is described later in this chapter.

Ring Security

This button opens the Security Configuration view, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds Table view, which is described later in this chapter.

Ring Configuration View

This view allows you to modify the values of some fields. You can access this view through the Ring Configuration button in the Configuration View.

Ring Configuration

This section of the Ring Configuration view displays the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Active Stations
The number of active stations currently inserted on the ring.

Beacon Recovery

This button allows you to Enable or Disable automatic beacon recovery for the TRXI. When Disabled, the TRXI will not attempt to reinsert itself into the ring after entering a beaconing state. If the device does not support automatic beacon recovery, SPECTRUM will display a status of Invalid.

Ring Alarm/Threshold/State

This section of the Ring Configuration view has three columns, displaying information on the ring alarms, their current thresholds, and their states (Enabled or Disabled). The applicable ring alarms are as follows:

Ring Purges
The threshold field allows you to set a value for the Ring Purges alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

AMP Errors
The threshold field allows you to set a value for the Active Monitor Error alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Claim Token Errors
The threshold field allows you to set a value for the Claim Token Errors alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Lost Frames
The threshold field allows you to set a value for the Lost Frames alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Token Errors
The threshold field allows you to set a value for the Token Errors alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Beacon State
The threshold field allows you to set a value for the Beacon State alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Frame Count
The threshold field allows you to set a value for the Frame Count alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

One final field in this view, Ring Timebase, allows you to set the timebase used for getting and setting all alarms pertaining to this ring. This value is measured in seconds.

Station Port Configuration View

This view allows you to modify the values of some fields. You can access this view through the Icon Subviews menu for the port icon in the Device and DevTop views. This view provides the following information:

Module
The number of the module this station port is on.

Port
The number of this station port.

Port Admin State

This button allows you to set the state of this station port as Enabled or Disabled.

Port Status
The status of this station port.

Port Link Status
The status of the station port link. This value will only be *Linked* if the station port detects a good phantom current.

Last Port Link Time
The time since the last station port link status change.

Port MAC Address
The MAC address of the attached station.

Port-to-Station Mapping

This button allows you to set the mapping of this port to a station as Enabled or Disabled.

Port Insertion Trap

This button allows you to configure this station port to generate a trap when a port is inserted or removed. Possible values are Enabled or Disabled.

Ring Port Configuration View

This view allows you to modify the values of some fields. You can access this view through the Icon Subviews menu for the ring in and ring out icons in the Device and DevTop views. This view provides the following information:

Module
The number of the module this ring port is on.

Port
The number of this ring port.

Port Admin State

This button allows you to set this ring port to be Enabled or Disabled.

Port Status
The status of this ring port.

Port Class
Indicates whether this ring port has autowrapping capability.

Port Media Select

This button allows you to select the port media used for this ring port as either NotSelectable, STP, or Fiber.

Port Fault Status
The media fault status for this ring port.

Last Port Fault Change
The time elaspsed since the last port fault.

Port Phantom Current

This button allows you to set the phantom current for this ring port as either Activated or Deactivated. A value of NotAvailable indicates the device does not support this option.

TRXI Security Configuration View

The Security Configuration view provides information on the security configuration for the ring, and allows you to modify the values of some fields. You can access this view through the Ring Security button in the Configuration View. This view provides the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Administration State

This button allows you to select the security administration state for the TRXI. When this button is set to EnabledWithAlarm, SPECTRUM will generate an alarm upon insertion of an illegal station into the ring. A state of EnabledWithRemoveAndAlarm generates an alarm and also removes the illegal station from the ring. Selecting Disabled turns off security for the TRXI.

Total Allowed Stations
The total number of stations in the *Allowed Stations* list.

Allowed Station Address Table

This table contains a list of addresses and interface numbers for the stations allowed on the ring. The active monitor for the ring is indicated by an asterisk (*) beside the address. Double-clicking on a table entry opens the Modify Allowed Station List view, described later in this section. This table has the following buttons:

Update

This button updates the contents of the Station Address Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. Select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. Select an attribute to sort on by clicking one of the column heading buttons.

Modify Allowed Station List

This button opens the Modify Allowed Station List view, which is described later in this chapter.

Accessing the Station Table Views

Two Station Table views are available for the TRXI, the Cabletron Token Ring Station Table view, and the 802.5 Station Table view. The Station Table views are accessed using the following methods:

- The Token Ring Station Table view is accessed by selecting Stations from the Icon Subviews menu.
- The LAN 802.5 Station Table view is accessed by clicking on the Detail button in the Performance View for the LAN_802_5 model containing the TRXI when the TRXI has been designated as the monitoring point for the LAN.

Token Ring Station Table View

This view displays a Station Table containing information for all stations directly connected to the TRXI device, buttons to manipulate the information in the table, and buttons to access other views. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any table with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Frames
The total number of frames that have been received/generated by this station.

Errors
The total number of errors that this station has detected on the ring.

Module
The slot number of the token ring module this station is connected to.

Port
The number of the port on the token ring module this station is connected to.

Update

This button updates the contents of the Station Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting

Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort on by clicking one of the column heading buttons.

Isolating Errors Table

This button opens the Station Isolating Errors view, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds view, which is described later in this chapter.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

802.5 Station Table View

This view displays a Station Table containing information for all stations on the ring, buttons to manipulate the information in the table, and buttons to access other views. The station that is the active monitor will be marked (*) to distinguish it from the other stations in the list. You can access this view by clicking on the Detail button in the Performance view for the LAN_802_5 model containing the TRXI, if the TRXI within the LAN is the monitoring point. The information displayed by this view is much the same as the Cabletron Token Ring Station Table view, providing the following information:

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Frames
The total number of frames that have been received/generated by this station.

Errors
The total number of errors that this station has detected on the ring.

Update

This button updates the contents of the Station Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove

This button allows you to remove the selected station from the ring.

Isolating Errors

This button opens the 802.5 Station Isolating Errors view, providing the same information and button functions as the Station Isolating Errors View described later in this chapter.

Configuration

This button opens the 802.5 Configuration view, which provides the same information and button functions as the TRXI Device Configuration view described earlier in this chapter.

Token Ring Isolating Errors Table

This view displays an Isolating Errors Table containing information for all stations directly connected to the TRXI device, buttons to manipulate the information in the table, and buttons to access other views. You can access this view through the Isolating Errors Table button in the Token Ring Station Table view. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any table with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Line
The number of line errors that this station has detected on the ring.

Burst
The number of burst errors that this station has detected on the ring.

A/C
The number of address/copied errors that this station has detected on the ring.

Abort
The number of abort sequences that this station has sent.

Internal
The number of internal errors that this station has detected.

Update

This button updates the contents of the Station Isolating Errors Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Non-Isolating Errors Table

This button opens the Station Non-Isolating Errors view, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds view, which is described later in this chapter.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Token Ring Non-Isolating Errors View

This view displays a Non-Isolating Errors Table containing information for all stations directly connected to the TRXI device, buttons to manipulate the information in the table, and buttons to access other views. You can access this view through the Non-Isolating Errors Table button in the Token Ring Station Isolating Errors view. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any table with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

LostFrames
The number of lost frames that this station has detected on the ring.

Congestions
The number of congestion errors that have occurred at this station.

FrameCopied
The number of frame copied errors that this station has detected on the ring.

Token
The number of token errors that this station has detected on the ring while it was acting as the active monitor.

Frequency
The number of frequency errors that this station has detected on the ring.

Update

This button updates the contents of the Station Non-Isolating Errors Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Alarms Table

This button opens the Station Alarm Thresholds view, which is described later in this chapter.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Station Alarm Thresholds View

This view displays a Station Alarm Thresholds Table containing information for all stations directly connected to the TRXI device, buttons to manipulate the information in the table, and buttons to access other views. You can access this view through the Alarms Table button in the Token Ring Station Table view. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any table with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Line
The current alarm threshold setting for line errors on the device.

Burst
The current alarm threshold setting for burst errors on the device.

A/C
The current alarm threshold setting for address/copied errors on the device.

Internal
The current alarm threshold setting for internal errors on the device.

Congestions
The current alarm threshold setting for congestion errors on the device.

Update

This button updates the contents of the Station Alarm Thresholds Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Alarm States Table

This button opens the Station Alarm States Table view, which provides the same button functions and fields as the Alarms Thresholds view, but displays information on the state of each alarm threshold (Enabled or Disabled).

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Station Detail View

The Station Detail view provides detailed information on the selected station. This view includes three color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRXI was initialized and as a percentage of overall traffic. Three buttons at the bottom of each pie chart select the way in which the data is represented (Total, Delta, and Accum). Another button, Clear, works in conjunction with the Accum button. For more information on these buttons refer to the *GIB Editor Guide*. Table 3-1 through Table 3-3 provide information on the statistics displayed by each chart. You can access this view through the Station Detail button in the Token Ring Station Table view. This view also provides the following information:

Station Address
The MAC address of the station for which the information in this table pertains.

Station Name
The ASCII name assigned to this station.

Station Module
The slot number of the token ring module this station is connected to.

Station Port
The number of the port on the token ring module this station is connected to.

Station Priority
The station's maximum access priority.

Station Removal

This button allows you to modify the removal state of the station and displays the last request made of the device. Remove causes the station to remove itself from the ring, NotRemovable disables removal from the ring, and DoNotRemove is the default setting and does not affect the station.

Upstream
The MAC address of the device (neighbor) immediately upstream of the TRXI on the ring.

Downstream
The MAC address of the device (neighbor) immediately downstream of the TRXI on the ring.

Configure Station Alarms

This button opens the Station Alarms Configuration view, which allows you to change the threshold value and state on the station for the Line, Burst, A/C, Internal, and Receive Congestion errors.

Table 3-1. Frame Breakdown Pie Chart

Statistic	Definition
Frames	The total number of frames detected on this station or ring.
Errors	The total number of errors detected by this station or ring.

Table 3-2. Isolating Errors Pie Chart

Statistic	Definition
Line	The total number of line errors that have occurred on this ring.
Burst	The total number of burst errors that have occurred on this ring.
	The total number of address/copied errors that have occurred on this ring.
Abort Sequence	The total number of abort sequences transmitted on this ring.
Internal	The total number of internal errors detected by station on this ring.

Table 3-3. Non-Isolating Errors Pie Chart

Statistic	Definition
Lost Frames	The total number of times a station has had its TRR timer expire while trying to transmit.
Congestions	The total number of times a station recognizes a frame addressed to it, but has no available buffer space.
Frame Copied	The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1.
Token	The total number of times the station acting as active monitor recognizes an error condition requiring a token be transmitted.
Frequency	The total number of frequency errors on this ring.

Station Alarms Dialog Box

The Station Alarms dialog box allows you to read, display, and modify the alarm settings for a single station or list of stations. The list displays the stations that were on the ring at the time the dialog box was opened, however you can read and modify the settings to a valid station that does not appear in the list and was added after opening the view by entering its address in the Station field. You can access this dialog box through the Station Alarms button in the Token Ring Station Table view. The Station Alarms dialog box provides the following information:

Station
The address of the current station. You can enter the address of a valid station in this field to make it the current station.

Alarm
The threshold alarms that can be manipulated. The alarms in this column include Line, Internal, Burst, A/C, and Congestion.

Threshold
The current setting for each corresponding alarm threshold. You can change the values by selecting the field and editing the number.

State
The state of each corresponding alarm threshold (Enable or Disable).

Stations
The MAC addresses of all stations in the ring at the time the dialog box was opened, except the current station, which is displayed in the *Apply Settings to* list. Double-clicking on an address in this list moves it to the *Apply Settings to* list.

Apply Settings to
The MAC addresses of all stations to which the threshold settings may be applied. This list will always contain the current station's MAC address upon opening the dialog box. Double-clicking on an address in this list moves it to the *Stations* list.

This button moves the selected item from the *Stations* list to the *Apply Settings to* list.

This button moves the selected item from the *Apply Settings to* list to the *Stations* list.

>>

This button moves all of the stations from the *Stations* list to the *Apply Settings to* list. The current station remains at the top of the *Apply Settings to* list if it is a valid station.

<<

This button moves all of the stations from the *Apply Settings to* list to the *Stations* list. The current station remains at the top of the *Apply Settings to* list if it is a valid station.

Apply

This button applies the threshold settings to the stations listed in the *Apply Settings to* list, or the station entered into the *Station* field if the list is empty.

Read

This button initiates a read of the threshold settings for the selected station, or the station entered into the *Station* field.

Cancel

This button exits the dialog box without applying settings to the stations, or once you have applied all changes and wish to exit.

Modifying the Threshold Settings

To change the threshold settings for one or more stations, follow these steps:

1. Move the addresses of all the stations to be modified to the *Apply Settings to* list. If you are only modifying the current station, this step is not necessary. If you wish to modify a valid station that does not appear in the list, enter its MAC address into the *Station* field. For information on how to move addresses between lists, refer to the buttons described earlier in this section.
2. Select the desired settings to be applied to the current station and all stations in the *Apply Settings to* list by clicking on Enable or Disable for each alarm threshold and typing a value into each *Threshold* field.
3. Click on the Apply button.

If the new alarm thresholds cannot be written to the device, due to the device being down, an error message appears and you should try again later.

Reading Thresholds from a Station

To read the current threshold settings from any station, follow these steps:

1. Select the station to be read from the *Stations* or *Apply Settings to* list. If you are reading from the current station, this step is not necessary. If you wish to modify a valid station that does not appear in either list, enter its MAC address into the *Station* field.

2. Click on the Read button. The threshold settings for the selected station are read from the device.

Modify Allowed Station List View

This view allows you to modify the security for the ring by adding or removing stations from the ring's list of allowed stations. This view provides the following functions:

Do not attempt to modify Ring Security without a complete understanding of Token Ring concepts and the TRXI device. Removal of the station acting as the connecting bridge from the Ring Security Allowed Station List can cause isolation from the ring.

Security Administration State

This section of the Modify Allowed Station List view allows you to choose the level of security for the ring. You may only select one option at a time. Click on the desired option to select it. The buttons change state to indicate the selected option.

Disable
This security option disables the ring security. All stations are allowed on the ring.

Enable with Alarm
This security option enables the ring security, and any station entering the ring will generate an alarm unless it is on the secure list. The device will place the station address on the Allowed Stations list.

Enable with Remove and Alarm
This security option enables the ring security, and any station not on the secure list that enters or currently resides on the ring will generate an alarm and be removed from the ring.

Allowed Stations

This section of the Modify Allowed Station List view displays the list of stations currently allowed on the ring. Double-clicking on an item in the list will move it to the Disallowed Stations window. However, you cannot move a station from the Allowed Stations window if the security is set to *Enable with Alarm*. A symbol (>) indicates that this station has recently been moved to the Disallowed Stations window from the Allowed Station window, and will remain until the changes are *applied*.

Disallowed Stations

This section of the Modify Allowed Station List view acts as a scratch pad or buffer to store addresses currently disallowed on the ring, but that you may want to move to the Allowed Stations window in the future. The ring does not read this buffer to deny ring access to certain stations, but rather denies access to all stations not explicitly listed in the Allowed Stations window. Double-clicking on an item in the list will move it to the Allowed Stations window. A symbol (<) indicates that this station has recently been moved to the Allowed Stations window from the Disallowed Station window, and will remain until the changes are applied.

This button will move the selected station from the Allowed Stations window to the Disallowed Stations window. A symbol (>) indicates that this station has recently been moved to the Disallowed Stations window from the Allowed Station window, and will remain until the changes are applied. You cannot move a station from the Allowed Stations window if the security is set to *Enable with Alarm*.

This button will move the selected station from the Disallowed Stations window to the Allowed Stations window. A symbol (<) indicates that this station has recently been moved to the Allowed Stations window from the Disallowed Station window, and will remain until the changes are applied.

This button allows you to add a new station. The station address must be added in valid hex MAC address form, and valid separators are the colon (:), period (.), and dash (-). You can add the new station to either the Allowed or Disallowed Station window by selecting the appropriate option in the ADD Station dialog box. A symbol (+) indicates that this station has recently been added, and will remain until the changes are applied. Selecting a recently

added and still marked (+) station and clicking on the DELETE button will remove it from the window.

DELETE

This button allows you to remove the selected station (*Refer to the CAUTION earlier in this section*). You may remove any station address except that belonging to the device itself, or a station from the Allowed Stations window if the security is set to *Enable with Alarm*. A symbol (-) indicates that this station has been marked for removal, and will remain until the changes are applied, at which time the station is actually removed from the window. Selecting the station and clicking on the ADD button will remove the symbol (-) and unmark the station for removal. This button will also remove a station marked with the symbol (+).

Delete All Allowed Stations

This button allows you to remove all of the stations in the Allowed Stations window (*Refer to the CAUTION earlier in this section*). A symbol (-) marks all of the items in the window, indicating that the stations have been designated for removal, and will remain until the changes are applied, at which time the stations are actually removed from the window. This option will remove all station addresses except that belonging to the device itself. Selecting a station and clicking on the ADD button will remove the symbol (-) and unmark that station for removal.

Apply

This button applies all changes made to the Allowed and Disallowed Stations windows, writing the list from the Allowed Stations window to the device and from the Disallowed Stations window to SPECTRUM, and removes all indicator markings from the modified stations.

Read

This button updates the Allowed and Disallowed Stations windows by reading the saved values from both the device and SPECTRUM. This serves to reset any changes you made to either window but did not apply.

Cancel

This button will allow you to exit from the view. Only changes that have been applied will be saved.

Changing the Ring Security State

To change the level of security on the ring, follow these steps:

1. Click on the desired security option.
2. Click on the Apply button, and then select OK in the confirmation window.

If the new security state cannot be written to the device, a *Cannot Update* error message appears. There may be a problem contacting the device, or the firmware may not have updated, and you should click on the Read button before attempting another update.

Adding Stations

To add stations to the view, follow these steps:

1. Click on the ADD button. A pop-up dialog box appears.
2. Enter the station address in the text entry field following the guidelines described in the ADD Button description earlier in this section.
3. Select the option corresponding to the list you want to add the station to (Allowed or Disallowed) and click on the Apply button.

If the new station cannot be written to the device, a *Cannot Update* error message appears. There may be a problem contacting the device, or the address you are trying to add to the station's allowed list may already exist, and you should click on the Read button before attempting another update.

Deleting Stations

To remove stations from the view, follow these steps:

1. Select the station address you want to remove (*Refer to the CAUTION earlier in this section*).
2. Click on the DELETE button. For restrictions governing the deletion of stations, refer to the DELETE Button description earlier in this section.
3. Click on the Apply button.

Chapter 4

Event and Alarm Messages

What is in this Chapter

This chapter describes the types of events and alarms generated by the TRXI and any probable cause messages corresponding to these alarms.

TRXI Events and Alarms

This table describes the event messages appearing in the Event Log, and any corresponding probable cause messages that may be displayed in the Enterprise Alarm Manager view for the TRXI.

Table 4-1. TRXI Events and Alarms

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010203 {d "%w- %d %m-, %Y - %T"} - The model created is not the same type as the device. Model type = {t}, Name = {m}, User = {u}. (event [{e}])	CsPCause/Prob00010203 The model created is not the same type as the device.
CsEvFormat/Event00010306 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has been cold started. (event [{e}])	No probable cause message

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010307 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m},has been warm started. (event [{e}])	No probable cause message
CsEvFormat/Event00010308 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}])	CsPCause/Prob00010308 Communication link is down.
CsEvFormat/Event00010309 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}])	No probable cause message
CsEvFormat/Event0001030a {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}])	CsPCause/Prob0001030a Authorization failure. Other user is trying to connect to device with an invalid community string.
CsEvFormat/Event0001030b {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {0 1}. (event [{e}])	CsPCause/Prob0001030b Lost contact with EGP neighbor.
CsEvFormat/Event00010401 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with an IP address already used by another model. (event [{e}])	CsPCause/Prob00010401 DUPLICATE IP ADDRESS: The model has the same IP address as that of some other model.
CsEvFormat/Event00010402 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with a physical (Mac) address already used by another model. (event [{e}])	CsPCause/Prob00010402 DUPLICATE PHYSICAL ADDRESS: The model has the same Physical address (Mac address) as that of some other model.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420107 {d "%w- %d %m-, %Y - %T"} - MODULE REMOVAL - Device {m} of type {t} reported that module {I 1} has been removed. (event [{e}])	CsPCause/Prob00420107 MODULE REMOVAL SYMPTOMS: A module within this chassis has been removed or has failed.
CsEvFormat/Event00420108 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of type {t} reported that a module has been inserted into slot {I 1}. (event [{e}])	CsPCause/Prob00420108 MODULE INSERTION SYMPTOMS: A module has been inserted into this chassis.
CsEvFormat/Event00420119 {d "%w- %d %m-, %Y - %T"} - TEMPERATURE WARM - Device {m} of type {t} reported that the module {I 1} temperature is warm. (event [{e}])	CsPCause/Prob00420119 TEMPERATURE WARM SYMPTOMS: The module may be defective or a fan has failed in the chassis. RECOMMENDED ACTIONS: 1) Verify that module is not defective. 2) Check for fans failures in the chassis and repair as needed.
CsEvFormat/Event0042011a {d "%w- %d %m-, %Y - %T"} - TEMPERATURE HOT - Device {m} of type {t} reported that the module {I 1} temperature is hot. (event [{e}])	CsPCause/Prob0042011a TEMPERATURE HOT SYMPTOMS: A module may be defective or a fan has failed in the chassis. A serious heat condition is present and should be addressed immediately. RECOMMENDED ACTIONS: 1) Verify that module is not defective. 2) Check for fans failures in the chassis and repair as needed.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042011b {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of type {t} reported that the slot {I 1} power supply voltage is low. (event [{e}])	CsPCause/Prob0042011b VOLTAGE LOW SYMPTOMS: The internal voltage of the power supply module is low. PROBABLE CAUSES: 1) The power supply unit is defective. 2) An AC power failure has occurred in the power supply. RECOMMENDED ACTIONS: 1) Check the power supply unit on device. 2) Check power source to device.
CsEvFormat/Event0042011c {d "%w- %d %m-, %Y - %T"} - TEMPERATURE NORMAL - Device {m} of type {t} reported that the module {I 1} temperature is normal. (event [{e}])	No probable cause message
CsEvFormat/Event0042011d {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of type {t} reported that the slot {I 1} power supplly voltage is normal. (event [{e}])	No probable cause message
CsEvFormat/Event0042011e {d "%w- %d %m-, %Y - %T"} - FAN ABNORMAL - Device {m} of type {t} reported that a fan in the chassis has failed or is operating at an abnormal RPM rate. (event [{e}])	CsPCause/Prob0042011e FAN ABNORMAL SYMPTOMS: A problem has been detected with a cooling fan or the fan tray assembly for this device. RECOMMENDED ACTIONS: This failure should be addressed before overheating causes damage to the device. Check for fan failures in the chassis and repair as needed.
CsEvFormat/Event0042011f {d "%w- %d %m-, %Y - %T"} - FAN NORMAL - Device {m} of Type {t} reported that a fan in the chassis has resumed normal operation. (event [{e}])	No probable cause message

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420201 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of type {t} reported that a station has been inserted into port {I 1} in module {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event00420202 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of type {t} reported that a station has been deinserted from port { I 1} in module {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event00420203 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of type {t} reported that module {I 1} has entered the ring speed fault state. (event [{e}])	CsPCause/Prob00420203 RING SPEED FAULT SYMPTOMS: A token ring module has entered the ring speed fault state. PROBABLE CAUSES: 1) A station or ring port attaching with a different speed than this module is configured for. RECOMMENDED ACTIONS: 1) Detach the station or ring port from the module. 2) Re-configure the station or ring port speed to match the speed of the affected module. 3) Re-attach the station or ring port to the module.
CsEvFormat/Event00420204 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of type {t} reported that module {I 1} has left the ring speed fault state. (event [{e}])	No probable cause message

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420205 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of type {t} reported that ring port {I 1} in module {I 2} has entered the wrapped state while its management state was enabled. (event [{e}])	CsPCause/Prob00420205 RING PORT FAULTED SYMPTOMS: A ring port has entered the wrapped state while its management state was enabled. PROBABLE CAUSES: 1) Bad cable connected to affected port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected port. 2) Power up device at other end of the cable. 3) Check device connection at other end of the cable.
CsEvFormat/Event00420206 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of type {t} reported that ring port {I 1} in module {I 2} has left the wrapped state. (event [{e}])	No probable cause message
CsEvFormat/Event00420207 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of type {t} reported that station {T 2} attached to port {I 5} in module {I 4} has detected a beacon of type {T LstBcnType 1}. Its upstream neighbor station is {O 3}. (event [{e}])	CsPCause/Prob00420207 BEACON STATE SYMPTOMS: A station attached to this device has detected a new beacon on the ring while the ring was in operational state. PROBABLE CAUSES: 1) The cable between this station and its upstream neighbor. 2) The token ring card in the upstream neighbor station is bad. 3) This station's token ring card is bad. RECOMMENDED ACTIONS: 1) Check the cable between this station and its upstream neighbor. 2) Check the token ring card in the upstream neighbor station. 3) Check this station's token ring card.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420208 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of type {t} reported that the last beacon of type {T LstBcnType 1} has been cleared. (event [{e}])	No probable cause message
CsEvFormat/Event00420209 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of type {t} reported that station {T 1} has been added to the Allowed Station List. (event [{e}])	No probable cause message
CsEvFormat/Event0042020a {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of type {t} reported that station {T 1} has been removed from the Allowed Station List. (event [{e}])	No probable cause message
CsEvFormat/Event0042020b {d "%w- %d %m-, %Y - %T"} - RING CONFIGURATION CHANGED - Device {m} of Type {t} reported that its ring configuration has changed. (event [{e}])	No probable cause message
CsEvFormat/Event0042020c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of type {t} reported that port {I 1} in module {I 2} was removed from the ring during a fault recovery condition. (event [{e}])	CsPCause/Prob0042020c PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A port was removed from the ring during a fault recovery condition. PROBABLE CAUSES: 1) Bad cable connected to removed port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to removed port. 2) Check device connection at other end of the cable. 3) After problem is resolved, enable the removed port.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042020d {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of type {t} reported that module {I 2} was bypassed during a fault recovery condition. (event [{e}])	CsPCause/Prob0042020d BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A module was bypassed during a fault recovery condition. PROBABLE CAUSES: 1) This module is configured with a different ring speed than the hub. RECOMMENDED ACTIONS: 1) Pull out the bypassed module from the hub. 2) Re-configure this module's ring speed to match that of the hub. 3) Physically insert the module back into the hub. 4) Set this module's bypass state to inserted.
CsEvFormat/Event0042020e {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of type {t} reported that port { I 1} in module {I 2} has detected a link while the port's management state was disabled. (event [{e}])	CsPCause/Prob0042020e PORT VIOLATION SYMPTOMS: A link has been detected for a port while its management state was disabled. PROBABLE CAUSES: 1) A physical connection has been made between a station and a port while the port's management state was disabled. RECOMMENDED ACTIONS: 1) If the station belongs on this ring, then enable the port's management state. 2) If the station does not belong on this ring, then physically disconnect the intruding station from the port.
CsEvFormat/Event0042020f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of type {t} reported that port { I 1} in module {I 2} has detected an unlink while the port's management state was disabled. (event [{e}])	No probable cause message

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420210 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of type {t} reported that the ring is oscillating. (event [{e}])	CsPCause/Prob00420210 FAULT RECOVERY OSCILLATION SYMPTOMS: The ring is oscillating. Oscillation occurs when the ring fails a short time after recovery.
CsEvFormat/Event00420211 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring purge threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420211 RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The ring purge threshold value has been exceeded. A ring purge is used to make the ring return to a normal condition. PROBABLE CAUSE: An active monitor will initiate the ring purge process when: 1) A token error condition is detected by the active monitor. 2) An adapter becomes the active monitor in the monitor contention process.
CsEvFormat/Event00420212 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring active monitor errors threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420212 RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The ring active monitor errors threshold value has been exceeded. PROBABLE CAUSES: 1) The active monitor may have received a ring purge or an active monitor present frame that it did not transmit. 2) The active monitor may have received a claim token MAC frame which indicates that a duplicate active monitor or another station has detected an error within the active monitor.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420213 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring token errors threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420213 RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The ring token errors threshold value has been exceeded. PROBABLE CAUSE: The active monitor has recognized an error condition that requires a token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).
CsEvFormat/Event00420214 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring claim token threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420214 RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The ring claim token threshold value has been exceeded. PROBABLE CAUSES: When a station in standby monitor state has determined that there is no active monitor operating on the ring. If the station claims the token, it becomes the new active monitor for the ring.
CsEvFormat/Event00420215 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring lost frames threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420215 RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The ring lost frames threshold value has been exceeded. PROBABLE CAUSE: The ring lost frame error occurs when a station is transmitting and its timer for return expires. The lost frame count keeps track of how many frames transmitted by a station fail to return. If a frame becomes lost the active monitor will issue a new token.

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420216 {d "%w- %d %m-, %Y - %T"} - RING BEACON STATE THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring beacon state threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420216 RING BEACON STATE THRESHOLD EXCEEDED SYMPTOMS: The ring beacon state threshold value has been exceeded. PROBABLE CAUSE: When a station determines that a serious ring failure has occured it will generate a beacon MAC frame.
CsEvFormat/Event00420217 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring frame count threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420217 RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The ring frame count threshold value has been exceeded.
CsEvFormat/Event00420218 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the line errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event00420219 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the internal errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}]	No probable cause message

Table 4-1. TRXI Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042021a {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the burst errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event0042021b {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the A/C errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event0042021c {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the receiver congestion threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message
CsEvFormat/Event0042021d {d "%w- %d %m-, %Y - %T"} - STATION REMOVE FAILURE - Device {m} of type {t} reported that station {O 1} could not be removed from the ring after three attempts. (event [{e}])	No probable cause message

Chapter 5

Application View

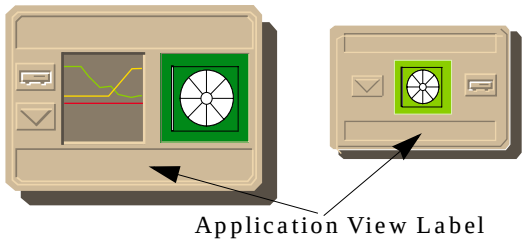
What is in this Chapter

This chapter describes the views available for the Token Ring Application supported by the TRXI. The supported Token Ring application (CT Token Ring) has a corresponding model type name of CT Token Ring. Application-specific subviews are available for the Token Ring application.

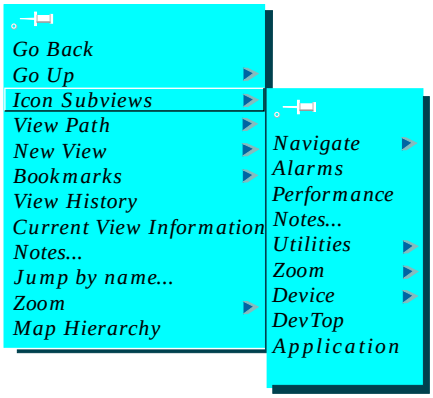
Accessing the Application View

You can access the Application View using one of the following methods:

- Double-click on the Application View label of the device icon.



- Highlight the device icon and select Application from the Icon Subviews menu.



Accessing the CT Token Ring Application Views

You can access the Token Ring Performance, Token Ring Configuration, Token Ring Station Table, and Token Ring Station Isolating Errors views from the CT Token Ring Icon (Icon Mode) or text label (List Mode) Icon Subviews menu. Figure 5-1 provides an example of the CT Token Ring Application (Icon Mode), including Icon Subviews menu options for both Icon and List modes. Figure 5-2 provides an example of the CT Token Ring Application (List Mode). For information on the Token Ring Configuration, Station Table, and Station Isolating Errors views, refer to Chapter 3, *Configuration Views*.

Figure 5-1. CT Token Ring Application View (Icon Mode)

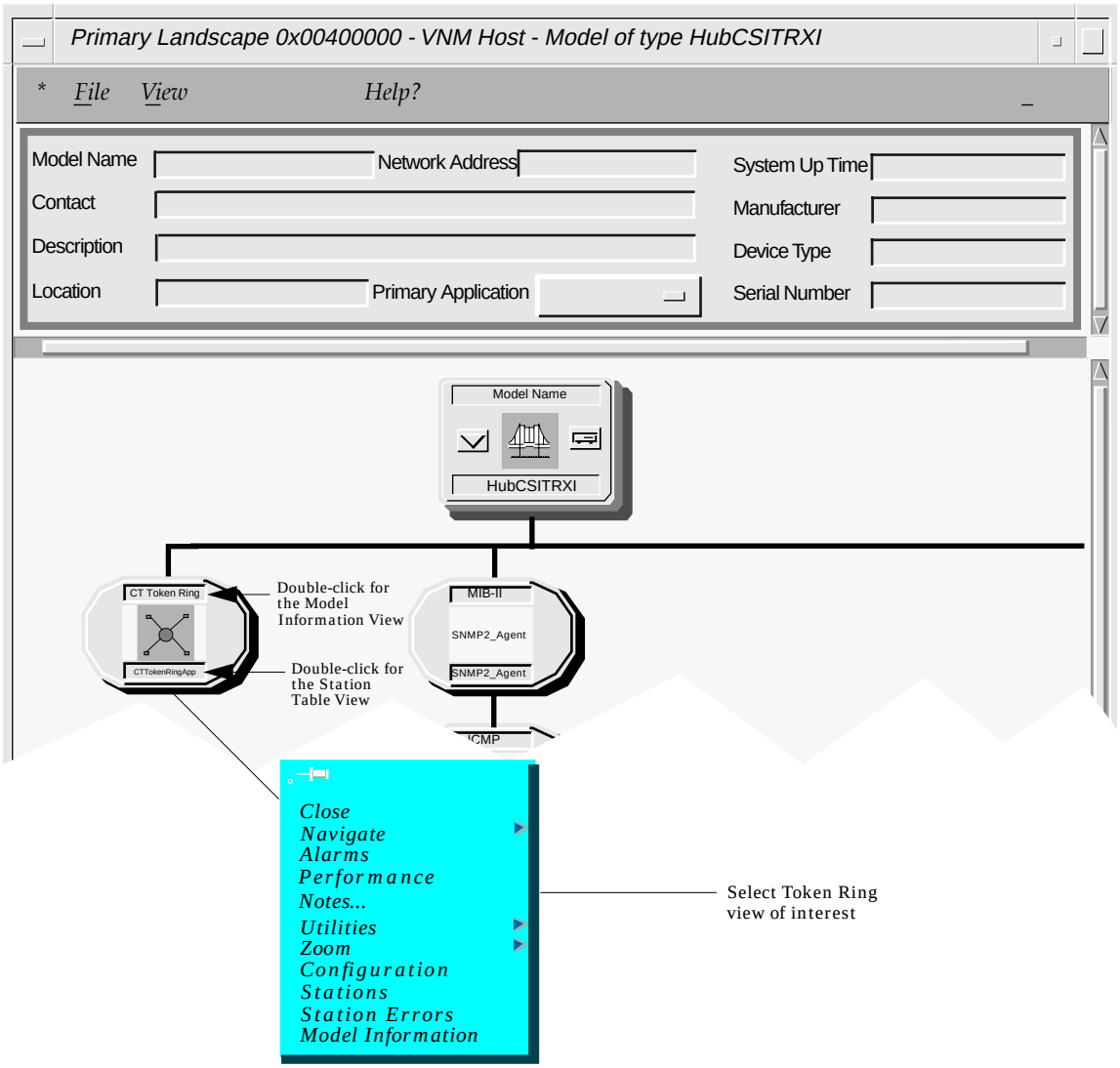
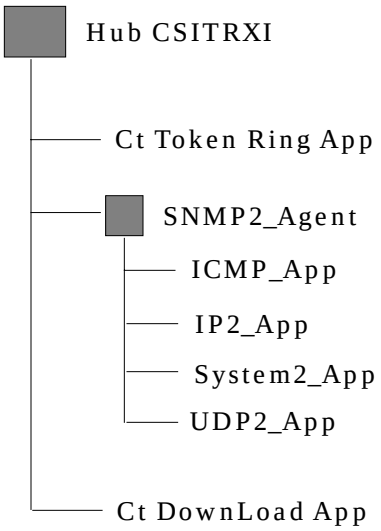


Figure 5-2. CT Token Ring Application View (List Mode)



Token Ring Performance View

The Token Ring Performance View displays a breakdown of statistics for the application. Table 5-1 provides the color definitions for the statistics displayed by the multi-attribute line graph. This view also provides the following fields:

Ring Name
The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Multi-Attribute Line Graph

The Multi-Attribute Line Graph provides a general indication of device activity. The attributes displayed are pre-selected and use colors to represent different statistics. Buttons allow you to modify the statistical presentation of

the Multi-Attribute Line Graph. Table 5-1 provides the color definitions for the CT Token Ring application.

For more information on the Multi-Attribute Line Graph, refer to the *SPECTRUM Views Reference.*

Table 5-1. CT Token Ring Performance Statistic Color Definitions

Statistic	Color
Load	Green
Frame Rate	Blue
Error Rate	Orange
Stations	White

Error Detail

The Error Detail button accesses the Token Ring Error Detail View. This view provides the following information:

Active Monitor Changes
The number of times the active monitor has been changed on this ring.

Ring Purges
The number of times the active monitor has purged the ring.

Beacon Events
The number of times the ring has entered a beaconing state.

Longest Beacon Duration
The length of time, displayed in days+hours:minutes:seconds, of the longest beaconing state on this ring.

Last Beacon Duration
The length of time, displayed in days+hours:minutes:seconds, of the last beaconing state on this ring.

Last Beacon Type
The type of beaconing frames last seen on this ring.

This view also provides three color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRXI was initialized and as a percentage of overall traffic. Three buttons at the bottom of each pie chart select the way in which the data is represented (Total, Delta, and Accum). Another button, Clear, works in conjunction with the Accum button. For more information on these buttons,

refer to the *GIB Editor Guide*. Table 5-2 through Table 5-4 provide information on the statistics displayed by each chart.

Table 5-2. Frame Breakdown Pie Chart

Statistic	Definition
Frames	The total number of frames detected on this station or ring.
Errors	The total number of errors detected by this station or ring.

Table 5-3. Isolating Errors Breakdown Pie Chart

Statistic	Definition
Line	The total number of line errors that have occured on this ring.
Burst	The total number of burst errors that have occured on this ring.
A/C	The total number of address/copied errors that have occured on this ring.
Abort Sequence	The total number of abort sequences transmitted on this ring.
Internal	The total number of internal errors detected by station on this ring.

Table 5-4. Non-Isolating Errors Breakdown Pie Chart

Statistic	Definition
Lost Frames	The total number of times a station has had its TRR timer expire while trying to transmit.
Congestions	The total number of times a station recognizes a frame addressed to it, but has no available buffer space.
Frame Copied	The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1.
Token	The total number of times the station acting as active monitor recognizes an error condition requiring a token to be transmitted.
Frequency	The total number of frequency errors on this ring.

Frame Detail

The Frame Detail button accesses the Token Ring Protocol & Frame Size Detail View. This view provides two color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRXI was initialized and as a percentage of overall traffic. Three buttons at the bottom of each pie chart select the way in which the data is represented (Total, Delta, and Accum). Another button, Clear, works in conjunction with the Accum button. For more information on these buttons refer to the *SPECTRUM Views Reference*. Table 5-5 and Table 5-6 provide information on the statistics displayed by each chart.

Table 5-5. Protocol Breakdown Pie Chart

Statistic	Definition
SNA	The total number of SNA frames seen on this ring.
XNS	The total number of XNS frames seen on this ring.
TCP/IP	The total number of TCP/IP frames seen on this ring.
Banyan	The total number of Banyan frames seen on this ring.
IPX	The total number of IPX frames seen on this ring.
NETBIOS	The total number of NETBIOS frames seen on this ring.
LANNetMgr	The total number of LAN Network Manager frames seen on this ring.
Other	The total number of all other frames seen on this ring.

Table 5-6. Frame Size Breakdown Pie Chart

Statistic	Definition
Up to 63	The total number of frames less than 64 bytes in size seen on this ring.
64-127	The total number of frames between 64 and 127 bytes in size seen on this ring.
128-255	The total number of frames between 128 and 255 bytes in size seen on this ring.
256-511	The total number of frames between 256 and 511 bytes in size seen on this ring.

Table 5-6. Frame Size Breakdown Pie Chart

Statistic	Definition
512-1023	The total number of frames between 512-1023 bytes in size seen on this ring.
1024-2047	The total number of frames between 1024 and 2047 bytes in size seen on this ring.
2048-4095	The total number of frames between 2048 and 4095 bytes in size seen on this ring.
4096 And Up	The total number of frames greater than 4096 bytes in size seen on this ring.

Lin/Log

This button toggles between a linear or logarithmic scale presentation of the graph.

Scroll to Date-Time

This button allows you to set the viewing area of the graph to begin at a specified date and time.

Change Time Scale

This button allows you to specify the Y axis time scale for the graph.

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